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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Greg Goshorn, P.C. 9600 Escarpment Suite 745-9 AUSTIN, TX 78749			EXAMINER JACOB, MARY C	
			ART UNIT 2123	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/815,233	Applicant(s) CHEN ET AL.	
	Examiner MARY C. JACOB	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-18, 20-25 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-18, 20-25 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The response filed 1/17/08 has been received and considered. Claims 1-8, 10-18, 20-25 and 27 have been presented for examination.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/17/08 has been entered.

Drawings

3. The objections to the drawings recited in the 9/17/07 Office Action have been withdrawn in view of the amendments to the drawings filed 1/17/08.

Claim Objections

4. The objections to the claims recited in the 9/17/07 Office Action, not repeated below, have been withdrawn in view of the amendments to the claims filed 1/17/08.
5. Claims 1, 13 and 14 are objected to because of the following informalities. Appropriate correction is required.

6. Claim 1, line 4 recites "a subset", it is unclear whether this "subset" is the "dynamically allocated" subset set forth in line 2.
7. Claim 1, line recites, 11 recites "a new service agreement", it would be better if written, "a new service level agreement".
8. Claim 13, line 13 recites "in the event a simulation produced by the simulation logic...", it would be better if written, "the simulation produced by the simulation logic..".
9. Claim 14, line 2 recites, "logic for comparing the service level result to a service level agreement". It is unclear which service level agreement this is directed to.
- 10.

Claim Rejections - 35 USC § 112

11. The rejections of the claims under 35 U.S.C. 112, second paragraph, recited in the 9/17/07 Office Action, not repeated below, have been withdrawn in view of the amendments to the claims filed 1/17/08.
12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
13. Claims 6, 14, 15 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
14. Claim 6 recites the limitation "the modified service level agreement" in line 2. There is insufficient antecedent basis for this limitation in the claim.

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15. Claim 14, line 3 recites “a result produced by the simulated processing”, which points to “simulating processing of the workload profile...using the allocated subset of the set of available computing resources to produce a service level result” in Claim 13. It is unclear whether “a result” as recited in Claim 14 points to the “service level result” in Claim 13, or intends to be directed to a different “result” produced by the simulation. Further, if it claim does intend to point to the “service level result”, it is unclear how the “service level result” can “process the workload profile”. Claim 13 recites that the “set of available computing resources” are used to process the workload profile. Therefore, it appears that the logic of Claim 14 should “signal” whether or not the “allocated subset of the set of available computing resources” will “process the workload profile at an expected service level...”, not whether the “result” will “process the workload profile at an expected service level”.

16. Claim 15 recites the limitation “the resource profile” in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

17. Claim 17 recites “the profile”. It is unclear which “profile” this limitation is directed to.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

20. Claims 1-4, 7, 8, 10, 12-18, 20-25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandra et al ("An Online Optimization-based Technique for Dynamic Resource Allocation in GPS Servers", Technical Report UM-CS-2002-030, University of Massachusetts, July 2002) in view of D'Arienzo et al ("Automatic SLA Management in SLA-Aware Architecture", 10th International Conference on Telecommunications, 23 Feb-1 March 2003, Vol. 2, pages 1402-1406).

21. As to Claims 1, 2, 13, 14 and 21 Chandra et al teaches: a method for predicting service level in a utility computing environment having a dynamically allocated subset of computing resources from a set of available computing resources, the method comprising the steps of: creating a resource profile corresponding to a first subset of computing resources allocated according to a service level agreement (page 1, column 2, paragraph 2, lines 18-29; page 2, section A, lines 1-10; pages 2-3, "Problem Definition", paragraphs 1-3; page 7, "Simulation Setup and Workload Characteristics", paragraph 1, lines 1-2; page 9, column 1, lines 4-9); loading a workload profile

representing a hypothetical demand profile for the enterprise (page 3, “Dynamic Resource Allocation”, paragraph 1; page 5, “Workload Prediction Techniques”, paragraph 2; page 7, “Simulation Setup and Workload Characteristics”, paragraph 2, lines 1-2); and simulating the processing of the workload profile, wherein the workload profile is based upon actual, measured data (page 5, “Workload Prediction Techniques”, paragraph 2; page 7, “Simulation Setup and Workload Characteristics”, paragraph 2, lines 1-5), using the resource profile to produce a service level result, wherein the resource profile resource subset is modified during the simulation according to the service level agreement and based upon the service level result (page 7, “Simulation Setup and Workload Characteristics”, paragraph 1, lines 1-2, paragraph 2, lines 1-2; pages 8-9, sections C and C.1; page 10, section C.2, last paragraph). As to logic and memory, it is concluded that since Chandra teaches that the prediction and allocation techniques are simulated using various simulation packages (page 7, section A, paragraph 1), it is understood that memory and logic are present to store the simulation program, algorithms, and system parameters, and that logic is present within the simulation software to perform the simulation operations as disclosed in the limitations.

22. Chandra et al does not expressly teach: (claims 1, 13 and 21) generating a new service level agreement in the event the resource profile cannot process the workload profile at an expected service level corresponding to the service level agreement, wherein the new service level agreement will process the workload profile at an expected service level and (claims 2, 14 and 21) comparing the service level result to a service level agreement and signaling whether the computing resource profile will

process the workload profile at an expected service level corresponding to the service level agreement.

23. D'Arienzo et al teaches an automatic mechanism for Service Level Agreement (SLA) management that can lead to cost reduction and enable the creation of short term services (Conclusions, lines 7-9) as an improvement to current interconnections among IP networks that are established by means of SLAs which require high manual overhead and a high associated cost and cause a non-optimized resource allocation of resources within the network (Abstract, lines 7-12). D'Arienzo et al teaches that a SLA is monitored and in the case of modified conditions with respect to either the quality of service offered for that particular service or the price agreed (the service level is compared to the service level agreement and it is determined whether the computing resources will process the workload profile at the expected service level), the SLA in question can either be re-negotiated or replaced by a brand new one (page 1405, column 2, paragraph 1, lines 7-11).

24. Chandra et al and D'Arienzo et al are analogous art since they are both directed to the management of network resources to meet quality of service requirements.

25. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of predicting service level in a utility computing environment having a dynamically allocated subset of computing resources from a set of available computing resources as taught in Chandra et al to further compare a service level result to a service level agreement and to generate a new service level agreement if it is determined that the service level result does not process

the workload profile at the expected level of service corresponding to the SLA as taught in D'Arienzo et al since D'Arienzo et al teaches an automatic mechanism for Service Level Agreement (SLA) management that can lead to cost reduction and enable the creation of short term services (Conclusions, lines 7-9) as an improvement to current interconnections among IP networks that are established by means of SLAs which require high manual overhead and a high associated cost and cause a non-optimized resource allocation of resources within the network (Abstract, lines 7-12).

26. As to Claims 3, 15 and 22, Chandra et al in view of D'Arienzo et al teaches: wherein the subset of computing resources includes allocated processing resources and memory resources for a client account (Chandra et al: page 2, section A, lines 1-10, lines 17-21).

27. As to Claim 4, Chandra et al in view of D'Arienzo et al teaches: wherein the service level agreement includes a base resource allocation (Chandra et al: page 3, column 1, lines 1-5; page 4, column 1, "ii"), a maximum resource allocation (Chandra et al: page 4, column 1, "ii"), resource costs (Chandra et al: page 4, column 1, last 4 sentences-column 2, line 2) and rules for dynamically reallocating the resources based upon workload demand (Chandra et al: pages 3-4, "Allocating Resource Shares to Applications", paragraphs 1-2).

28. As to Claims 7, 17 and 24, Chandra et al in view of D'Arienzo et al teaches: wherein the set of computing resource profile also includes communication bandwidth allocation (Chandra et al: page 2, section A, lines 17-21).

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29. As to Claims 8, 18 and 25, Chandra et al in view of D'Arienzo et al teaches: the step of comparing the workload profile to a second workload profile representing an actual demand profile for a second client account wherein the simulating step is based upon a result of the comparison step (Chandra et al: page 9, section C.2, paragraphs 1 and 2; Figures 8 and 9).

30. As to Claims 10, 20 and 27, Chandra et al in view of D'Arienzo et al teaches: wherein the workload profile includes scheduling information and the simulation step incorporates the scheduling information in the processing (Chandra et al: pages 2-3, "Problem Definition", paragraph 3; pages 8-9, section C.1).

31. As to Claim 12, Chandra et al in view of D'Arienzo et al teaches: wherein the workload profile is loaded from a configuration file (Chandra et al: page 7, section A, paragraphs 1 and 2).

32. As to Claims 23 and 16, Chandra et al in view of D'Arienzo et al teach: wherein the computing resource profile further comprises: a base resource allocation (Chandra et al: page 3, column 1, lines 1-5; page 4, column 1, "ii"); a maximum resource allocation (Chandra et al: page 4, column 1, "ii"); resource costs (Chandra et al: page 4, column 1, last 4 sentences-column 2, line 2); and rules for dynamically reallocating the resources based upon workload demand (Chandra et al: pages 3-4, "Allocating Resource Shares to Applications", paragraphs 1-2).

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33. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chandra et al in view of D'Arienzo et al as applied to claim 1 above, further in view of Chan (US Patent 6,466,898).

34. Chandra et al in view of D'Arienzo et al teaches simulating the processing of a workload profile using a resource profile to produce a service level result.

35. Chandra et al in view of D'Arienzo et al does not expressly teach wherein the simulation is scheduled to run automatically at an off-peak time.

36. Chan teaches an HDL simulator that provides simulation job scheduling on a local and/or remote platform that allows designers to balance the work loads on their network resources by scheduling simulation runs at off-peak hours as well as to automate the regular regression testing of their designs (column 4, lines 33-39; column 14, line 51-column 15, line 3).

37. Chandra et al in view of D'Arienzo et al and Chan et al are analogous art since they are both directed to the running of simulations.

38. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the simulating of the processing of a workload profile using a resource profile to produce a service level result as taught in Chandra et al in view of D'Arienzo et al to further include scheduling the simulation to run automatically at an off-peak time as taught in Chan since Chan teaches that job scheduling allows designers to balance workloads on their network resources by scheduling simulation runs at off-peak hours (column 4, lines 33-39; column 14, line 51-column 15, line 3).

39. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chandra et al in view of D'Arienzo et al as applied to claim 1 above, further in view of Sheets et al (US Patent 6,816,905).

40. Chandra et al in view of D'Arienzo et al teaches a resource profile corresponding to a first subset of computing resources allocated according to a service level agreement, loading a workload profile representing a demand profile for an enterprise and simulating the processing of a workload profile using a resource profile to produce a service level result.

41. Chandra et al in view of D'Arienzo et al does not expressly teach the step of determining a cost associated with meeting the service level agreement.

42. Sheets et al teaches a method and system for operating a hosted service provider for the internet that is capable of dynamically reallocating servers across multiple disparate customer accounts to provide hosted services with a more economical and flexible server farm management (column 6, lines 19-23; column 7, lines 9-13) wherein the cost associated with meeting a service level agreement is determined (column 18, lines 60-67).

43. Chandra et al in view of D'Arienzo et al and Sheets et al are analogous art since they are both directed to dynamic reallocation of resources in a shared data center.

44. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the simulating of a workload profile using a resource profile to produce a simulation result as taught by Chandra et al in view of D'Arienzo et al to further include determining the cost associated with meeting a service level

agreement as taught by Sheets et al since Sheets et al teaches a method and system for operating a hosted service provider for the internet that is capable of dynamically reallocating servers across multiple disparate customer accounts to provide hosted services with a more economical and flexible server farm management (column 6, lines 19-23; column 7, lines 9-13).

45. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chandra et al in view of D'Arienzo et al as applied to claim 1 above, and further in view of Nargarajan et al ("Modelling and Simulation of an Alarm Based Network Management System for Effective SLA Monitoring and Management", SCI 2003. 7th World Multiconference on Systemics, Cybernetics and Informatics Proceedings, July 27-30, 2003).

46. Chandra et al in view of D'Arienzo et al teach a method for predicting service level in a utility computing environment wherein the method includes leading a workload profile representing a demand profile for an enterprise and simulating processing of the workload profile using a resource profile corresponding to a subset of computing resources allocated according to a service level agreement.

47. Chandra et al in view of D'Arienzo et al does not expressly disclose: (claim 11) wherein the workload profile includes information corresponding to one or both of prioritization of resources and importance of specific resources.

48. Nagarajan et al teaches simulation as an important process in documenting service level agreements (SLA) since simulation studies allow an Internet Service

Provider (ISP) to verify their SLA agreements and check if it meets customer expectations and whether the specified service could be provided (section 1, paragraph 2, lines 4-6), wherein the simulation techniques include comparing the service level result to a service level agreement and signaling whether the computing resource profile will process the workload profile at an expected service level corresponding to the service level agreement (section 3, last paragraph, lines 10-12; page 5, column 2, lines 3-9; section 6.2, paragraph 1, lines 1-1-9) and wherein the workload profiles simulated include information corresponding to one or both of prioritization of resources and importance of specific resources (page 2, "The type of scenarios examined in this SLA simulation study", items 2 and 3; page 4, column 1, lines 2-7).

49. Chandra et al in view of D'Arienzo et al and Nagarajan et al are analogous art since they are both directed to the testing of an ISP's allocation of resources and whether they satisfy workload demand and the expected service level corresponding to a service level agreement.

50. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the simulating of processing a workload profile using a resource profile to produce a service level result as taught in Chandra et al in view of D'Arienzo et al to further include wherein the simulated workload profile includes information corresponding to one or both of prioritization of resources and importance of specific resources as taught in Nagarajan et al since Nagarajan et al teaches simulation as an important process in documenting service level agreements (SLA) since simulation studies allow an Internet Service Provider (ISP) to verify their SLA

agreements and check if it meets customer expectations and whether the specified service could be provided (section 1, paragraph 2, lines 4-6).

Response to Arguments

51. Applicant's arguments filed 1/17/08 have been fully considered but they are not persuasive.

52. Applicant recites that the 102(b) rejections are moot since the limitations associated with claims 9, 19 and 26 have been incorporated into independent claims 1, 13 and 21 (page 13, paragraph 1). The Examiner notes that the limitations amended into the independent claims filed 1/17/08 are directed to "generating a *new* service level agreement", not to "generating a *modified* service agreement" as recited in prior claims 9, 19 and 26.

53. Applicant argues that Applicants do not believe that the generation of a new SLA based upon actual, rather than hypothetical work profile data, is supported by the cited art (page 13, paragraph 2). The Examiner would first like to note that as to the "workload profile", Claim 13 sets forth that the "workload profile" represents a "hypothetical demand profile" and that it is "*based upon*" actual, measured data. The claim does not set forth that the workprofile data is "actual" data. Further, Claim 13 does not recite that the generation of the new SLA is "based upon" actual work profile data. The claim only sets forth that a new SLA is generated, it does not recite "how" it is generated, or that it is generated "based" upon some data. It is the Examiner's position that the teachings of Chandra in view of D'Arienzo et al teach or suggest this limitation

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as cited above, specifically where Chandra teaches a hypothetical workload profile based upon actual measured data and D'Arienzo et al teaches the generation of a new SLA if modified conditions do not allow a current SLA to be met (see claim rejections above).

54. Applicant argues that there is no teaching or suggestion in Chandra directed to modifying an agreement such as a SLA as set forth in Applicant's claims (page 13, paragraph 3). It is the Examiner's position that the claim limitations set forth in independent claims 1, 13 and 21 are directed to "generating a new service level agreement", not necessarily modifying an existing service level agreement. Further, the teachings of Chandra alone are not relied upon to teach this limitation. The teachings of Chandra et al in view of D'Arienzo et al are relied upon to teach or suggest this limitation wherein D'Arienzo et al teaches that a new SLA is generated if modified conditions do not allow a current SLA to be met (see claim rejections above).

55. Applicants further argue that Nagarajan is not directed to modifying an existing SLA or to create a new SLA (page 14). The teachings of Nagarajan et al are not relied upon to teach or suggest the limitation of "generating a new service level agreement", the teachings of Chandra et al in view of D'Arienzo et al are relied upon to teach or suggest this limitation as cited above. Further, it is the Examiner's position that the claim limitations set forth in independent claims 1, 13 and 21 are directed to "generating a new service level agreement", not "modifying an existing service level agreement to create a new SLA".

56. Applicant argues that a prima facie case of obviousness has not be set forth since the prior art fails to teach or suggest all claim limitations (claim 14). It is the Examiner's position that the cited art teaches or suggests all claim limitations as currently amended, set forth above.

Conclusion

57. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

58. He et al ("Resource Provisioning in a Multi-Service Enabled ADSL System", 10th International Conference on Telecommunications, Vol. 2, pages 1105-1112, 23 Feb-1 March 2003) teaches provisioning resources for an ADSL network and teaches simulations to determine whether a SLA can be complied with, and if not, suggesting new SLA parameters or renegotiating the SLA.

59. Bartz et al (US Patent 6,701,342) teaches a method and apparatus for evaluating service level agreements.

60. Barkan et al (US Patent 6,925,493) teaches a system for automatically monitoring and managing service level agreements.

61. Sinha et al (US Patent 7,120,694) teaches a method and apparatus for service level agreement formulation and management.

62. Kryskow, Jr. (US Patent 6,763,389) teaches a method of automatically adjusting a service level agreement based on the current scale and scope of a network in view of the status of multiple service level agreements.

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63. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary C. Jacob whose telephone number is 571-272-6249. The examiner can normally be reached Tuesday-Thursday, 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Mary C Jacob/
Examiner, Art Unit 2123

/M. C. J./
3/4/08

/Paul L Rodriguez/
Supervisory Patent Examiner,
Art Unit 2123